

NEW SPECIES OF *UROSIGALPHUS* (HYMENOPTERA: BRACONIDAE)
FROM SOUTH AMERICA

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Abstract.—Five new species of *Urosigalphus* are described. One, *diversus*, is the first species of the subgenus *Microurosigalphus* to be collected in South America. One, *alius*, belongs to the subgenus *Urosigalphus* and three, *flexus*, *porteri*, and *surinamensis*, belong to the subgenus *Neourosigalphus*. Changes in existing keys to South American species are presented.

This paper describes the first species of the subgenus *Microurosigalphus* collected in South America. A new species of the subgenus *Urosigalphus* is also described along with three new species of the subgenus *Neourosigalphus*. Changes in the existing keys to species (Gibson, 1974) within these subgenera are provided.

Urosigalphus (Microurosigalphus) diversus Gibson, New Species
Figs. 1, 2

General features.—Length, 2.8 mm. Head and thorax deep reddish black; carapace dark red brown; abdomen brown; clypeus dark red brown apically, labrum yellow tan; mandible yellow tan, with red base and apex; palpi pale yellow; antenna dark brown distally, becoming yellow basally with yellow scape and pedicel; fore- and midlegs yellow; hindcoxa and femur yellow, hindtibia yellow, distal tip of tibia and tarsi brown. Tegula yellow tan. Wings clear, hyaline, with nearly colorless hairs, costa tan basally and light brown apically; stigma medium brown, remaining veins medium brown distally but becoming nearly colorless basally.

Male.—*Head:* General anterior outline quadrate. Vertex, temples, and genal regions sparsely finely punctured. Lower face nearly flat, evenly finely punctate; fronto-clypeal groove with a small, deep, oval anterior tentorial pit near each end. Clypeus impunctate, rather quadrate; lower central margin straight. Labrum punctate. Antennal scapes separated with area between fossae narrow, finely punctate with a small central carina, extending dorsally toward median ocellus, and a shallow, broad, nitidous, sparsely, finely punc-

tate antennal sculcus extending feebly around rear ocelli. Antenna 16-segmented; scape long and relatively slender, inner margin slightly rounded; pedicel almost half as long as scape; 1st flagellar segment longer than 2nd. Ocelli circular, on the ocellar triangle. Occipital carina apparently incomplete dorsally and moderately developed.

Thorax: Unevenly punctate. Mesonotum fairly regularly, finely punctate, the general surface uneven; notaulices narrow, deep, with a row of moderately large punctures, area of convergence broad, nearly square, depressed, bisected centrally with a carina, with moderately large punctures; median lobe regularly, finely punctate; lateral lobes gently rounded, sparsely, finely punctured, with a small lateral carina; posterolateral carina weakly flangelike. Scutellar groove broad and deep with 7 dissecting carinae and 2 bordering lateral carinae. Scutellum roundly trigonal in dorsal profile, with very small sparse punctures; lateral and posterior surface with a line of moderate punctures. Propodeum gently rounded posteriorly, entirely rugoso-punctate without carinae. Mesopleuron impunctate except for a line of moderate punctures around anterior, dorsal, and posterior borders; mesosternum smooth nearly impunctate with a line of small punctures along center line. Lateral regions of pronotum centrally impunctate, rest irregularly punctured with small punctures. Tegula impunctate. Wings hyaline; submedian cell longer than median cell basally.

Abdomen: Carapace elongate oval in dorsal view and teardrop-shaped in lateral view; general surface rugoso-punctate anteriorly, punctate and shiny posteriorly; apex of carapace without apical spines. Parameres of external genitalia very short.

Female.—Unknown.

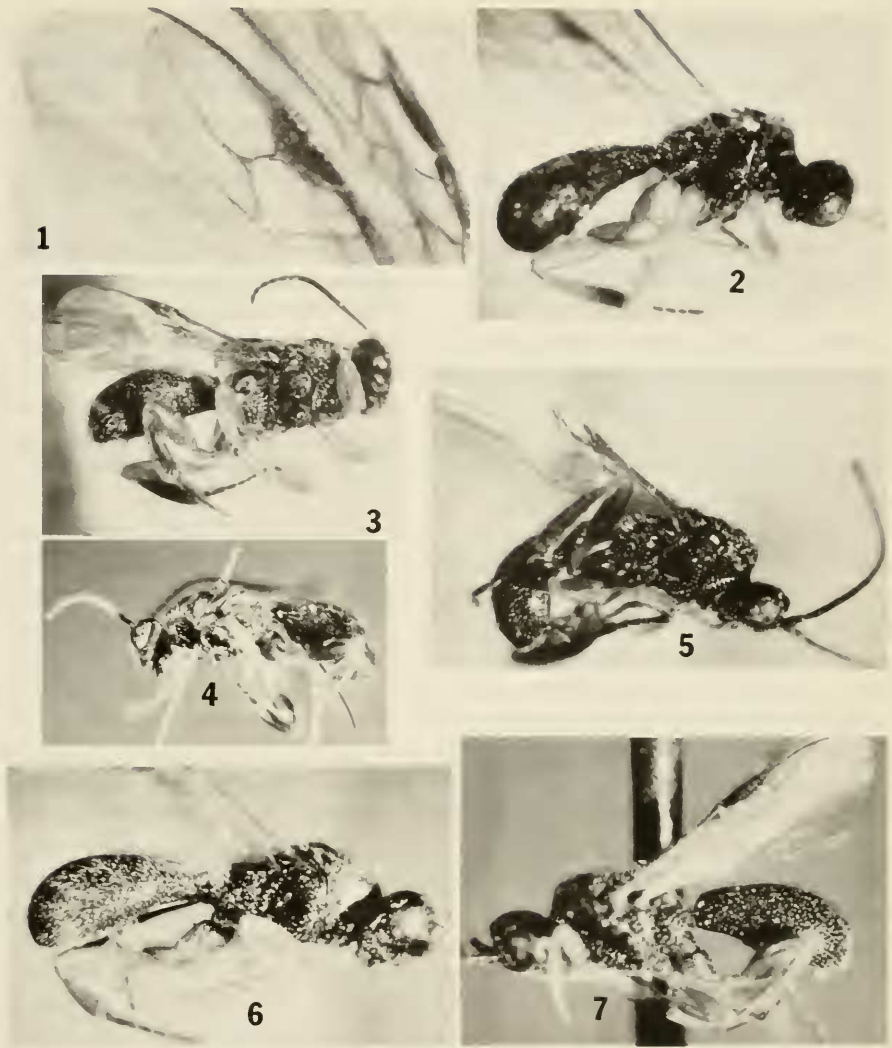
Holotype.—♂, Argentina, "Villa Nougés," Tucumán, XI-26/28-64; 1250 m, C. Porter. In Museum of Comparative Zoology.

Biology and host.—Unknown.

Remarks.—This is the only member of the subgenus *Microurosigalphus* known from South America. The apex of the carapace is without tubercles so it would key *neomexicanus* Crawford in existing keys (Gibson, 1972). It differs from *neomexicanus* by leg, antenna, palpi, and tegula color. These being predominately yellow in *diversus* and medium to dark brown in *neomexicanus*. It is also the only known species of *Microurosigalphus* with 16 antennal segments.

KEY TO SPECIES OF SUBGENUS *UROSIGALPHUS* OF SOUTH AMERICA

1. Apex of carapace without tubercles 2
- Apex of carapace with tubercles 4
- 2(1). Thorax and carapace red *rubicorpus* Gibson
- Thorax black, carapace red black or black 3



Figs. 1-7. 1, *Urosigalphus* (*Microurosigalphus*) *diversus*, showing open radial cell. 2, *U.* (*M.*) *diversus*, type. 3, *U.* (*Urosigalphus*) *alius*, type. 4, *U.* (*Neurosigalphus*) *surinamensis*, type. 5, *U.* (*N.*) *flexus*, type. 6, *U.* (*N.*) *flexus*, allotype. 7, *U.* (*N.*) *porteri*, type.

- 3(2). Palpi maroon, fore- and midlegs medium brown basally *trinidadensis* Gibson
- Palpi light brown, fore- and midlegs orange tan ... *alius*, new species
4(1). Carapace with short, poorly formed tubercles .. *sanguineus* Gibson
- Carapace with long, well-developed tubercles 5

- 5(4). Carapace tubercles sharp pointed; wings clear *chalcodermi* Wilkinson
 — Carapace tubercles blunt tipped; wings tinted brown
 *venezualaensis* Gibson

Urosigalphus (Urosigalphus) alius Gibson, New Species

Fig. 3

General features.—Length, 4.9 to 5.1 mm. Head black; thorax black; carapace black to red black; abdomen dark brown; clypeus maroon apically; labrum red; mandible orange with red base and black apex; palpi light brown; antennal scape and pedicel deep maroon, pedicel with narrow tan apical band, rest of antenna dark red brown; fore- and midlegs orange tan; hindleg light red, hindtibia apex and tarsi dark red brown. Tegula dark red brown. Wings hyaline, tinted brown, with brown hairs, costa dark red brown, stigma dark red brown, remaining veins dark brown but becoming paler towards base of the wing.

Female.—*Head*: General anterior outline quadrate with small ocellar pyramid. Vertex coarsely rugoso-punctate; temples and genal regions finely punctate. Face finely punctate, fronto-clypeal groove well impressed with small round anterior tentorial pits. Clypeus transverse; finely punctate; lower part wide, margin reflexed and gently concave. Labrum evenly punctured. Mandible surface finely rugoso-punctate. Antennal scapes well separated, with 2 weak carinae dividing the intervening area into 3 equal rugoso-punctate parts, extending dorsally and joining ocellar pyramid carinae; a broad, rugoso-punctate antennal sulcus. Antenna 14-segmented; scape short and broad, arcuate; pedicel short, nearly round; 1st and 2nd flagellar segments subequal. Ocelli small and ovoid. Occipital carina complete.

Thorax: Shorter than carapace, and irregularly punctate. Mesonotum irregularly punctate; notaulices broad, fairly deep, with large punctures, area of convergence quadrate, deeply, coarsely rugoso-punctate; median lobe finely punctate with or without a poorly formed small central carina anteriorly and a transverse carina, coarsely rugoso-punctate, laterally; lateral lobes flattish, finely punctured, with lateral carina bordered by large punctures, posterolateral carina well developed and flangelike. Scutellar groove rather narrow and deep with 3 strong central carinae. Scutellum roundly trigonal in dorsal outline, with moderate to large irregular punctures and moderate to strong rugae forming longitudinal carinae dorsally, coarsely rugoso-punctate and slightly concave laterally. Propodeum flat posteriorly, with a moderately strong transverse carina; dorsal area narrow in lateral profile, the posterior surface abruptly dropping to point of abdominal articulation; central dorsal carina strongly developed, joining the transverse carina which proceeds down both sides in an arc past the point of abdominal articulation; dorsal surface with strong carinae delimiting large, irregular

depressions; lateral areas rounded in cross-section and irregularly, strongly rugoso-punctate. Mesopleuron smooth centrally and sparsely, finely punctate; upper margin coarsely rugoso-punctate with a vertical carina; lower central area with a few elongate punctures in the mesopleural groove; posterior margin with a row of large punctures divided by short carinae and a bordering carina; mesosternum rounded and finely, densely punctate, sectioned by low carinae with a punctate median line. Lateral regions of pronotum moderately punctate; the posterior corner similar behind a carina. Tegula broadly pear shaped. Wings hyaline; the stigma long and broad, submedian cell longer than median.

Abdomen: Carapace elongate oval; general surface longitudinally rugoso-punctate, tending to form carinae dorsoanteriorly; apex of carapace rounded, grooved ventrally, without a pair of tubercles. Ovipositor 1.0 mm long, sheath brownish-black clothed with fine hairs.

Male.—Similar to female in general structure and color except for customary sexual differences. Parameres of external genitalia moderately long and narrow, dark brown.

Holotype.—♀, Surinam-Lelydorp; Sumatra Road; 23–26-III-1964, D. C. Geijskes, sandridges in savannah forest. In Rijksmuseum van Natuurlijke Historie, Lieden, Netherlands.

Allotype.—♂, 5 Paratypes. Surinam-Lelydorp; Sumatra Road. (1 ♂) 17–21-IV-1964; (1 ♀) 23–26-III-1964; (1 ♀) 26–31-III-1964; (1 ♀) 4–7-IV-1964; D. C. Geijskes; sandridges in savannah forest. In Rijksmuseum van Natuurlijke Historie. (2 ♀) 17–21-IV-1964. In National Museum of Natural History, Washington, D.C.

Biology and host.—Collected from sand ridges in savannah forest in March and April.

Remarks.—This species is close to *trinidadensis* but separated by the light brown palpi and orange-tan fore- and midlegs. *Urosigalphus trinidadensis* has maroon palpi and medium brown fore- and midlegs.

KEY TO SOUTH AMERICAN SPECIES OF SUBGENUS *NEUROSIGALPHUS*

1. Carapace with apical tubercles, antenna 14-segmented 2
- Carapace without apical tubercles, antenna 14- to 17-segmented 9
- 2(1). Carapace with apical tubercles very small to obsolete 3
- Carapace with apical tubercles well developed 4
- 3(2). Hindleg dark red-brown; body length over 4.5 mm *pullatus* Gibson
- Hindleg orange; body length less than 4.0 mm *obsoletus* Gibson
- 4(2). Hindfemur dark red brown *acutus* Gibson
- Hindfemur not dark red brown 5

- 5(4). Hindfemur medium red brown *eulechriopsis* Cushman
 – Hindfemur tan to red orange 6
- 6(5). Head and thorax maroon *tuberculatus* Gibson
 – Head and thorax black 7
- 7(6). Carapace black or nearly black 8
 – Carapace red anteriorly, black posteriorly *bicolor* Gibson
- 8(7). Legs yellow tan; ovipositor 0.5 mm long *spinatus* Gibson
 – Legs red orange; ovipositor 1.2 mm long *bidentata* Gibson
- 9(1). Antenna 14-segmented 16
 – Antenna 16- or 17-segmented 10
- 10(9). Antenna 17-segmented; interantennal area with a large central
 carina; body length over 5.0 mm *pseudochelonus* Gibson
 – Antenna 16-segmented; interantennal area without a large central
 carina, body length less than 5.0 mm 11
- 11(10). Hindleg dark red brown to black; palpi dark brown
 *braziliensis* Gibson
 – Hindleg yellow to dark brown; palpi yellow or tan 12
- 12(11). Hindcoxa orange; trochanters tan *ornatus* Gibson
 – Hindcoxa medium to dark brown 13
- 13(12). Fore- and midcoxa medium to dark brown 14
 – Fore- and midcoxa tan 15
- 14(13). Trochanters tan; tegula dark brown, carapace apex smooth ...
 *cautus* Gibson
 – Trochanters medium brown; tegula medium brown, carapace
 apex punctate *obscurus* Gibson
- 15(13). Wings tinted brown; apex of carapace finely rugoso-punctate
 *surinamensis*, new species
 – Wings clear; apex of carapace impunctate *safflavus* Gibson
- 16(9). With apical projections on ventral flange of carapace; palpi light
 red *paraguayensis* Gibson
 – Without apical projections on carapace flange; palpi tan or yel-
 low 17
- 17(16). Palpi tan; hindcoxa dark red basally; hindfemur and tibia yellow
 or dark red brown *flexus*, new species
 – Palpi yellow; hindcoxa brown; hindfemur brown; hindtibia
 brown, darker dorsally *porteri*, new species

Urosigalphus (Neourosigalphus) flexus Gibson, New Species

Figs. 5, 6

General features.—Length 2.2–3.3 mm. Head and thorax black; carapace black; abdomen brown; clypeus red black to black apically, labrum deep maroon; mandible rufo-testaceous with dark red base and apex; palpi tan, antenna dark brown; forelegs yellow tan; midlegs brown or yellow tan;

hindlegs with coxa dark red basally, hindfemur and tibia yellow or femur, tibia, and tarsus dark red brown. Tegula dark brown to red brown. Wings clear, hyaline, with nearly colorless hairs, costa light brown; stigma medium to dark brown, remaining veins medium brown distally but becoming pale basally.

Male.—*Head*: General anterior outline roundly quadrate. Vertex, temples and genal regions finely punctured. Lower face rounded, evenly, finely punctate; fronto-clypeal groove with a small, deep, oval anterior tentorial pit near each end. Clypeus quadrate; lower central margin gently concave. Mandible teeth long and narrow, outer surface punctate. Antennal scapes well separated, area between fossae smoothly rounded and rugoso-punctate without a small central carina and with a shallow, narrow, nitidous, sparsely, finely punctate antennal sulcus extending to or slightly past rear ocelli. Antenna 14-segmented; scape long and relatively slender, inner margin slightly rounded; pedicel almost half as long as scape. Ocelli ovoid, interocellar area rugose, slightly grooved with slightly raised areas centrally between groove and rear ocelli. Occipital carina complete and well developed throughout.

Thorax: Unevenly punctate. Mesonotum fairly regularly punctate, general surface uneven; notaulices broad and shallow, with moderately large punctures, area of convergence broad, quadrate, depressed, with moderately large punctures; median lobe densely, finely punctate without a small, short central carina anteriorly; lateral lobes gently rounded, sparsely, finely punctured, with a small lateral carina; posterolateral carina weakly flangelike. Scutellar groove rather broad and deep with 3 to 5 dissecting and 2 bordering carinae. Scutellum roundly trigonal in dorsal profile, with irregular moderate to large punctures; posterior surface gently rounded. Propodeum gently sloped posteriorly, with a moderate, irregular transverse carina; central dorsal carina short and prominent, transverse carina becoming lost laterally in the lateral rugosity; dorsal surface and posterior surfaces roughly and densely rugoso-punctate; lateral areas irregularly rugoso-punctate. Mesopleuron punctate; middle central area impunctate, lower anterior area with moderate punctures in a mesopleural groove; mesosternum rugoso-punctate or punctate. Lateral regions of pronotum punctate, upper posterior corner with a slight bend, the triangular area behind bend sparsely, finely punctate and centrally carinate. Wings hyaline; submedian cell as long as median basally.

Abdomen: Carapace teardrop shaped in dorsal view and comma shaped in lateral view; general surface longitudinally rugoso-punctate anteriorly, densely punctate posteriorly; apex of carapace without apical spines. Parameres of external genitalia very short.

Female.—Similar to ♂ but carapace oval in dorsal view and teardrop shaped in lateral view. Ovipositor 0.75 mm long, $\frac{1}{2}$ as long as carapace. Ovipositor sheath brown.

Holotype.—♂, Argentina, "Villa Nougés," Tucumán; XI-26/28/64 7250 m, C. Porter. In Museum of Comparative Zoology.

Allotype.—♀, Same data as holotype.

Paratype.—♂, Same data as holotype. In National Museum of Natural History.

Biology and host.—Unknown.

Remarks.—This species is close to *paraguayensis* by the presence of 14 antennal segments and lack of tubercles on carapace apex but differs in lack of ventral flange projections and tan palpi color.

Urosigalphus (Neurosigalphus) porteri Gibson, New Species

Fig. 7

General features.—Length, 2.9 mm. Head and thorax black; carapace black with maroon tint basally; abdomen rufo-testaceous; clypeus dark red brown apically, labrum red; mandible yellow with dark red brown base and apex; palpi yellow; antenna dark brown; fore- and midlegs yellow tan; hindlegs with coxa and femur brown, tibia and tarsus dark brown dorsally. Tegula brown. Wings clear, hyaline with colorless hairs, costa light brown basally and medium brown apically; stigma dark brown, remaining veins medium brown distally but becoming paler basally.

Female.—Differs from *flexus* in following: *Head*: Clypeus semi-circular. Interantennal area with a shallow, finely punctate rugoso-punctate antennal sulcus extending past rear ocelli. Interocellar area grooved with slightly raised rugoso-punctate areas between groove and rear ocelli.

Thorax: Mesonotum notaulices broad and deep. Scutellar groove with 3 dissecting and 2 lateral carinae. Scutellum rugoso-punctate with irregular large punctures. Propodeum with dorsal surface with irregular rugae delimiting irregular depressions; posterior surface roughly and densely rugoso-punctate. Mesopleuron lower anterior area with large punctures in a mesopleural groove; mesosternum coarsely rugoso-punctate. Lateral regions of pronotum punctate, with deep, moderate punctures.

Abdomen: Carapace oval in dorsal view and somewhat teardrop shaped in lateral view. Ovipositor 1 mm long, $\frac{4}{5}$ as long as carapace, ovipositor sheath brown.

Male.—Unknown.

Holotype.—♀, Quebrada-Lules, Tucumán, Argentina 9-XII-64; C. C. Porter. In Museum of Comparative Zoology.

Distribution.—Known only from type.

Biology and host.—Unknown.

Remarks.—*Urosigalphus porteri* is close to *flexus*, but *flexus* differs in that its palpi color is yellow and the hindleg and coxa are brown.

Urosigalphus (Neourosigalphus) surinamensis Gibson, New Species

Fig. 4

General features.—Length 4.2 mm. Head and thorax black; carapace dark red black; abdomen dark brown; clypeus dark red brown apically; labrum red tan; mandible red tan with red apex; palpi tan; antenna medium brown with dark brown scape and pedicel; foreleg tan, midleg tan, hindleg dark brown with tan trochanter; coxae same color as legs. Tegula red tan. Wings hyaline with brownish tint, with sparse brown hairs, costa and stigma brownish black, remaining veins pale brown.

Female.—Differs from *flexus* in following: *Head*: Clypeus rather quadrate; lower central margin gently curved. Mandible outer surface fairly smooth. Interantennal area densely, finely punctate and with three small carinae just anterior to the median ocellus, and a fairly deep, finely punctate antennal sulcus extending almost to the rear ocelli. Antenna 16-segmented; scape short and relatively slender; inner margin arcuate; pedicel almost half as long as scape; apical segment of flagellum $\frac{1}{4}$ longer than the penultimate segment. Ocelli oval, interocellar area deeply, finely punctate, slightly raised. Occipital carina incomplete, poorly developed laterally and absent in dorsal region.

Thorax: Mesonotum irregularly punctate, with notaulices narrow and shallow with large-sized punctures, area of convergence broad and round, with large-sized punctures; median lobe finely punctate with a small central carina; lateral lobes flattened, densely, finely punctured, with a small lateral carina; posterolateral carina not flangelike. Scutellar groove deep, segmented by 5 carinae. Scutellum coarsely, deeply, rugoso-punctate and carinate dorsally, with irregular moderate, carinate punctures laterally and posteriorly. Propodeum nearly flat posteriorly, with a strong transverse carina; the transverse carina proceeds irregularly down both sides to the point of abdominal articulation; dorsal surface irregularly carinate and rugoso-punctate; posterior surface roughly and densely rugoso-punctate and bicarinate. Mesopleuron mostly impunctate; central area impunctate and nitidous, surrounded by large, deep punctures; mesosternum bicarinate and rugoso-punctate with large deep punctures. Lateral regions of pronotum irregularly punctured with moderate, fairly deep punctures, except impunctate centrally; upper posterior corner with a carinate bend, triangular area behind carina with large deep punctures. Wings hyaline, with a brown tint; submedian cell longer than median basally.

Abdomen: Carapace elongate oval in dorsal view and teardrop shaped in lateral view; general surface longitudinally finely carinate dorsally, and finely rugoso-punctate distally. Ovipositor 1.5 mm long, nearly as long as carapace; ovipositor sheath reddish brown.

Male.—Unknown.

Holotype.—♀, Surinam, Phedra, 7 to 14-XII-64; D. C. Geijskes, rain forest in hilly interior. In Rijksmuseum van Natuurlijke Historie.

Biology and host.—Unknown.

Remarks.—This species differs from all known South American species by the brown tinted wings. It is similar to *braziliensis* Gibson in size and keys near *safflavus* Gibson but is easily separated by the brown tinted wings and finely, rugoso-punctate carapace apex.

ACKNOWLEDGMENTS

I thank Dr. Kees van Achterberg for the loan of specimens from the Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands, and Alfred F. Newton, Jr. for the loan of specimens from the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

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